August 2015

YCANopen-IT-RL78F14

Quick Start Guide

1. Kit contents

The RL78 CANopen Starter Kit contains the follow components:

- RL78/F14 target-board
- CAN-USB Device CPC-USB/ARM7-GTI analyser
- Renesas E1 On Chip debugger
- 2 USB cable
- Installation VD

A separate power supply is not necessary.

---------Pictures----------

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2. Installation guide

How to install the CanOpenRL78G14 KIT

Note:- You will need "local admin" privileges to install and run this demo.

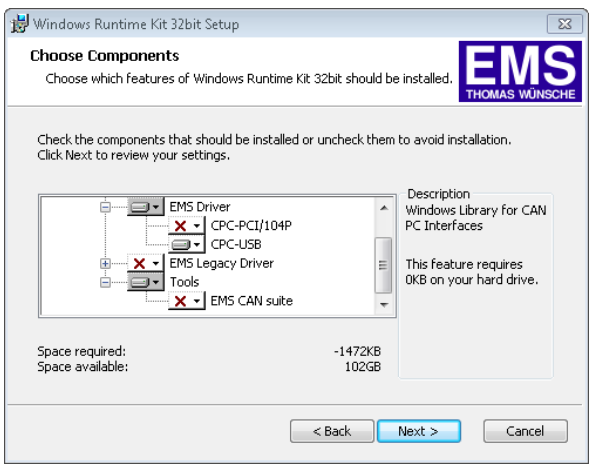
a) Connect the CPC USB Device analyser to your Windows PC/Laptop (min. Windows 7)

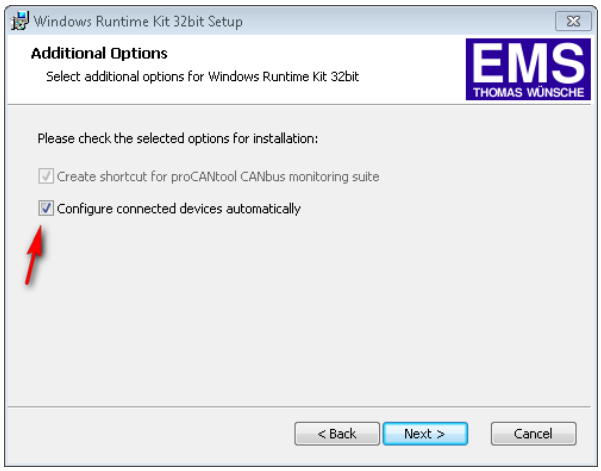
Note:- The driver will be not installed, this is O.K.

b.) Install the CAN Analyser by selecting the "CAN Analyser tool" button on the Setup page

Note: Select CPC Driver

If the selection window for the driver pops up, please de-select the CPC-PCI/104P and the EMS CAN suite and check the box to configure the device automatically.




Windows Runtime Kit 32bit Setup
Additional Options
Select additional options for Windows Runtime Kit 32bit
EMS
THOMAS WÜNSCHE
Please check the selected options for installation:
Create shortcut for proCANtool CANbus monitoring suite
Configure connected devices automatically
< Back
Next >
Cancel

The driver is not digitally signed; please confirm to install a non-signed driver.

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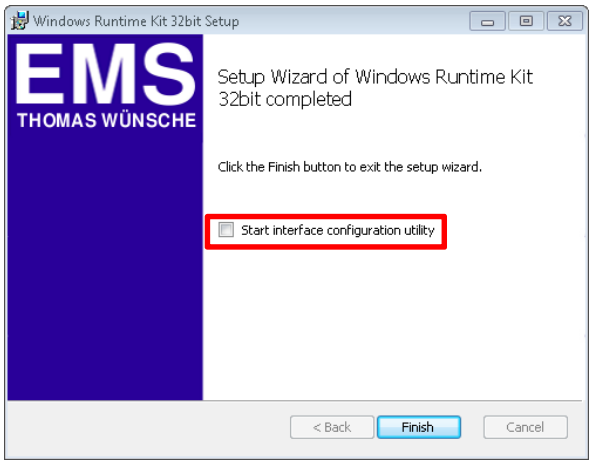
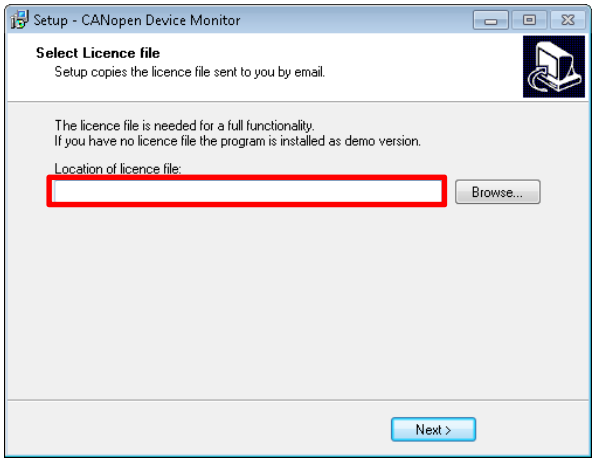


Un check
"Start interface Configuration Utility"


Setup - CANopen Device Monitor
Select Licence file
Setup copies the licence file sent to you by email.
The licence file is needed for a full functionality.
If you have no licence file the program is installed as demo version.
Location of licence file:
Browse...
Next >

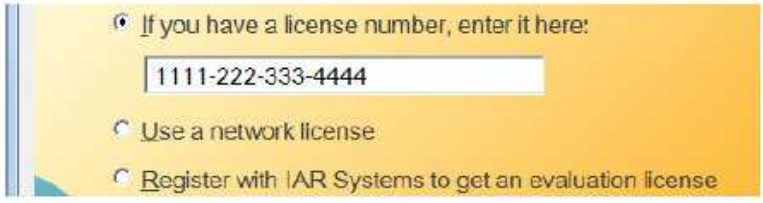
Please ignore the request for the license file at this time:

Please check if a license file has been copied in the path C:\Program Files\port\cdm
If file name is "licence_00642_V32.dat", please delete it!!

c) Install the CANopen Design Tool by selecting the "CAN Design tool" button on the Setup page

d) Install the CANopen Design Tool by selecting the "IAR EWRL78 evaluation" button on the Setup page

If you do not have a licensed version, you have to register at IAR to get an evaluation license, which is limited to 16K.


If you have a license number, enter it here:
1111-222-333-4444
Use a network license
Register with IAR Systems to get an evaluation license

Note: If you need an evaluation license, select **Register with IAR Systems to get an evaluation license** instead.

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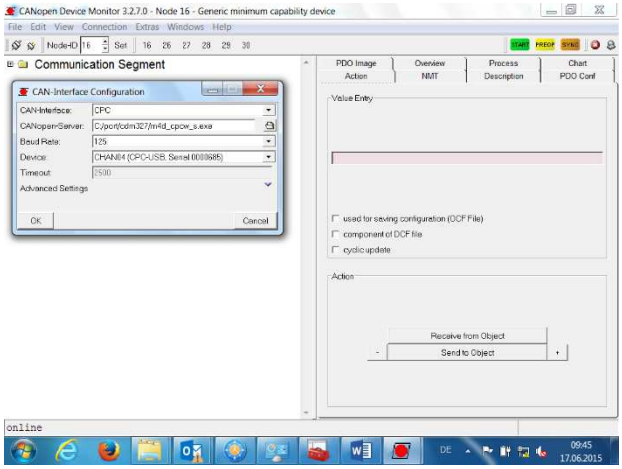
3. Running the demo

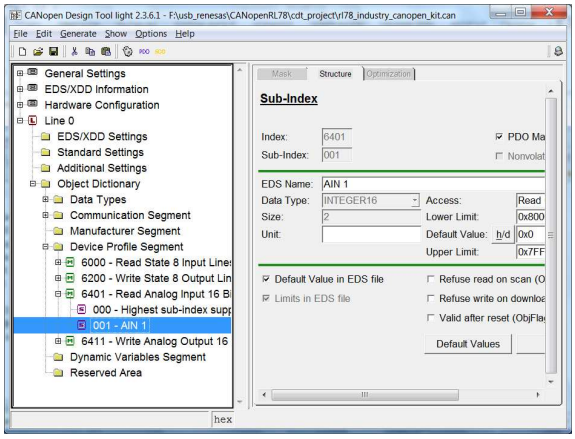
After the first start of the CANopen Device Monitor, you have to select the proper CAN Interface in the menu “connections” please see screen shot.

Please make sure to select “CPC” and the corresponding CANopen Server “m4d_cpcw_s.exe” and the previously selected resp. created Channel (in this example CHAN04).



In the next step – please load the EDS File from the CD (CD-ROM\CANopenRL78\rl78_industry_CANopen_kit.eds)

You will see in the CANopen device monitor the objects, which are available in the demo.



Please connect now (logically) to the CANopen network by clicking “Connection” → “Connect”. Please confirm the Security Warning.

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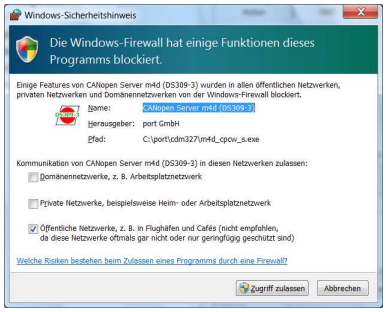
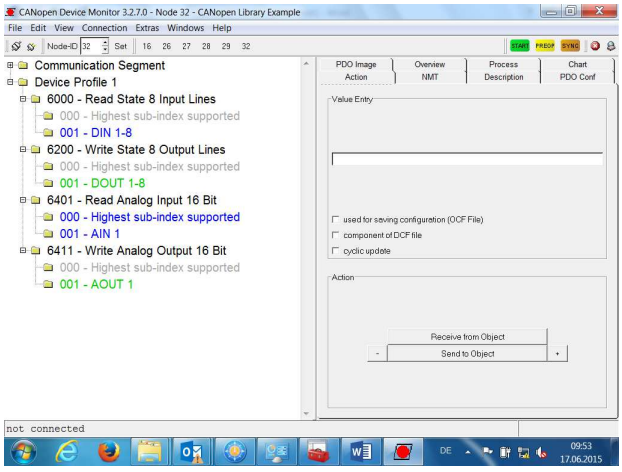

Windows-Sicherheitshinweis
Die Windows-Firewall hat einige Funktionen dieses Programms blockiert.
Einige Features von CANopen Server m4d (DS309-3) wurden in allen öffentlichen Netzwerken, privaten Netzwerken und Domänennetzwerken von der Windows-Firewall blockiert.
Name: CANopen Server m4d (DS309-3)
Herausgeber: port GmbH
Pfad: C:\port\cdm327\m4d_cpcw_s.exe
Kommunikation von CANopen Server m4d (DS309-3) in diesen Netzwerken zulassen:
Domänennetzwerke, z. B. Arbeitsplatznetzwerk
Private Netzwerke, beispielsweise Heim- oder Arbeitsplatznetzwerk
Öffentliche Netzwerke, z. B. in Flughäfen und Cafés (nicht empfohlen, da diese Netzwerke oftmals gar nicht oder nur geringfügig geschützt sind)
Welche Risiken bestehen beim Zulassen eines Programms durch eine Firewall?
Zugriff zulassen
Abbrechen

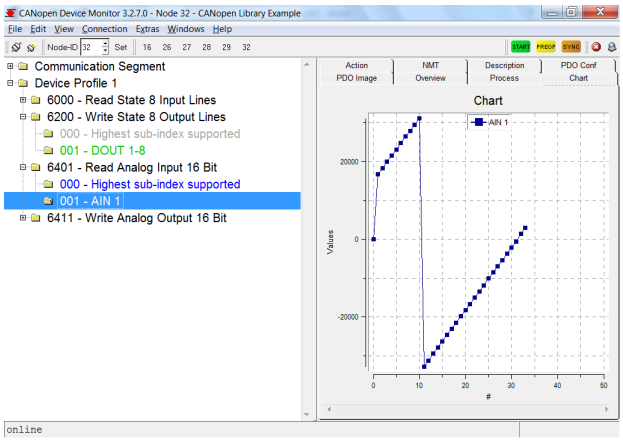
Please start the IAR project as per separate instructions.

You can now operate the available CANopen Objects (as per the loaded EDS-File) with the CANopen Device Monitor.

Example: Object 6200h sub-index 001 operates the LEDs LED1 & 2 (LSBs, bit-coded), writing a 1, 2 or 3 to this object operates the LEDs accordingly.


CANopen Device Monitor 3.2.7.0 - Node 32 - CANopen Library Example
File Edit View Connection Extras Windows Help
Communication Segment
Device Profile 1
6000 - Read State 8 Input Lines
000 - Highest sub-index supported
001 - DIN 1-8
6200 - Write State 8 Output Lines
000 - Highest sub-index supported
001 - DOUT 1-8
6401 - Read Analog Input 16 Bit
000 - Highest sub-index supported
001 - AIN 1
6411 - Write Analog Output 16 Bit
000 - Highest sub-index supported
001 - AOUT 1
Value Entry
used for saving configuration (OCF File)
component of OCF file
cyclic update
Action
Receive from Object
Send to Object
not connected

Further you can choose the tab “Chart” and drag & drop the Object 6401h sub-index 001 into the chart area – you will see now the by the demo permanently operated analog output.


CANopen Device Monitor 3.2.7.0 - Node 32 - CANopen Library Example
Communication Segment
Device Profile 1
6000 - Read State 8 Input Lines
6200 - Write State 8 Output Lines
000 - Highest sub-index supported
001 - DOUT 1-8
6401 - Read Analog Input 16 Bit
000 - Highest sub-index supported
001 - AIN 1
6411 - Write Analog Output 16 Bit
Chart
AIN 1
Values
online

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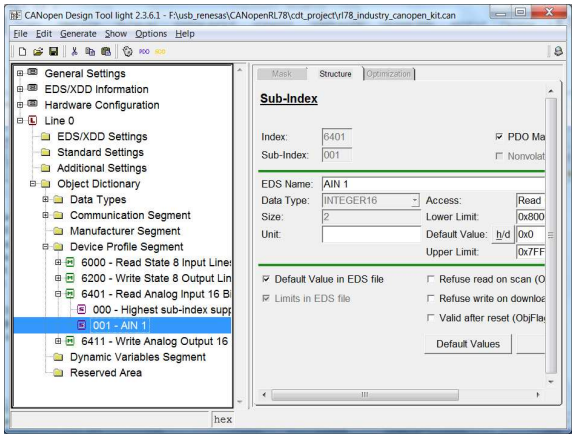
Please start the CANopen design-Tool now. We recommend the latest on port's website available version (http://www.port.de/en/products/canopen/tools/canopen-design-tool.html)

Please open now the corresponding CANopen design-tool Project:
CD-ROM\CANopenRL78\cdt_project\rl78_industry_CANopen_kit.can



The user can now add/remove objects until the CANopen design-tool demo version's limit is reached. Do not add ANY Communication Services as the Binary Demo Image does not support this. Upon operating the Menu "Generate" the design-tool creates a (changed) set of configuration files into the Software IDE. From here the demo can be used in various ways. The user can link the Binary Demo Library into an own application. The Binary Demo Image runs for about one hour after start. The Binary Image Library can be found here: CD-ROM\CANopenRL78\CANopen\lib\colib.r87

For the functionality of the Binary Library Image the user should refer to the User Manual, located in CANopenRL78\doc

To the CANopen Demo in general.

Features.

NMT	slave
SDO server	1
Transmit PDO	1
Receive PDO	2
Max. PDO mapping entries	8 – for each PDO
Heartbeat Producer	yes
Object Dictionary	yes, max. 15 objects
Supported CAN bitrates	20, 50, 100, 125, 250, 500, 800, 1000 kbit
Software timers for application	yes

Provided with this demo you will find an IAR project. This project contains a binary library[1] of the port CANopen Library and example sources for implementing a CANopen device.

[1] The binary library file is located under project path/canopen/lib and the filename is colib.r87 .

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Folder structure of the demo:

- canopen – CANopen Library and API header files
- cdt_project – CANopen design-tool project
- drivers – CAN driver header files
- env_iar – IAR project for this demo
- src – CANopen device implementation files, application

The demo has some limitations in functionality. The number and type of communication services cannot be changed. On the other hand, changes in the manufacture specific segment of the CANopen dictionary are allowed.

The second limitation is the number of objects in the object dictionary. The maximum number of objects is 15 including the communication objects.

The third limitation is that the stack stops running after 60min. If that happens the device needs a reset.

1. Other information

2. Kit usage limitations

3. What next

4. Support

In case of issues to operate the board, please check if there is any update available on Renesas website or contact Renesas.

Online technical support and information is available at:

www.renesas.com

Technical contact details:

America : techsupport.america@renesas.com

Europe : software_support@lm.renesas.com

Japan : csc@renesas.com

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